WHAT IS CLAIMED IS:

1. A hydrogel forming system which comprises hydrophobic and hydrophilic components which are convertible into a one phase crosslinked network structure by free radical polymerization.

2. A hydrogel-forming system which comprises from 0.01 to 99.99% by weight of (A) a hydrophobic macromer with unsaturated group terminated ends, and from 99.99 to 0.01% by weight of (B) a hydrophilic polymer which is a polysaccharide containing hydroxy groups which are reacted with unsaturated group introducing compound; wherein the total of the percentages of (A) and (B) is 100%.

3. The hydrogel-forming system according to Claim 2 wherein the hydrophobic macromer is prepared by reacting the hydroxyls of a diol obtained by converting hydroxy of terminal carboxylic acid group of aliphatic polyester to aminoethanol group, with an unsaturated group introducing compound.

4. The hydrogel-forming system according to Claim 2 wherein the hydrophilic polymer is dextran wherein one or more hydroxyls in a glucose unit of the dextran is (are) reacted with an unsaturated group introducing compound.

5. The hydrogel-forming system according to Claim 2 wherein the hydrophillic polymer is dextran-maleic acid monoester.

6. Hydrogel formed by the free radical polymerization of the hydrogel-forming system of Claim 2 which has a three dimensional crosslinked polymer network structure containing hydrophobic and hydrophilic components.

7. Hydrogel as claimed in Claim 6 which has a drug of weight average molecular weight ranging from 200 to 1,000 entrapped in the three dimensional crosslinked polymer network.

8. The hydrogel as claimed in Claim 7 wherein the drug entrapped in the three dimensional network is indomethacin.

9. Hydrogel as claimed in Claim 6 which has a water-soluble macromolecule of weight average molecular weight ranging from 1,000 to 10,000 entrapped in the three dimensional crosslinked polymer network.

10. The hydrogel as claimed in Claim 9 wherein the water-soluble macromolecule is a polypeptide.

11. The hydrogel as claimed in Claim 10 wherein the polypeptide is insulin.

12. Hydrogel as claimed in Claim 6 which has a synthetic or natural polymer of weight average molecular weight ranging from 10,000 to 100,000 entrapped in the three dimensional crosslinked polymer network.

13. The hydrogel as claimed in Claim 12 wherein the synthetic or natural polymer is a protein.